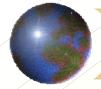


Primenergy, L.L.C.

Solids Gasification & Energy Generation



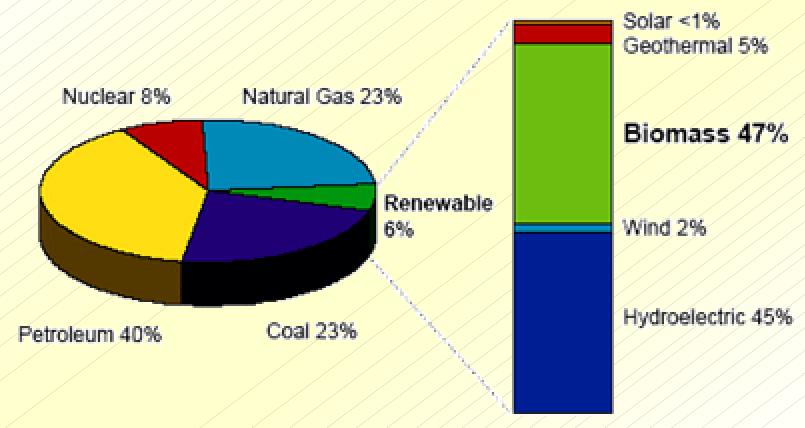
#### Primenergy & Alternative, Renewable Energy Market

- The Broad Market of Renewable Energy
  - Wind, Solar or Biomass
  - Regulatory Driven
    - Deregulation
    - Environmental
      - Restrictions on Land Application
      - Reduction in Carbon Dioxide from Fossil Fuel
  - Economically Driven by Energy Pricing
- Biomass
  - Definition
    - Any plant derived organic matter available on a renewable basis, including dedicated energy crops and trees, agricultural food and feed crops, agricultural crop wastes and residues, wood wastes and residues, aquatic plants, animal wastes, municipal wastes, and other waste materials
  - Abundance and Price





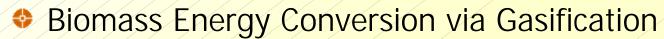
### Biomass Share of U.S. Energy Supply



Source: Renewable Energy Trends 2004, EIA, August 2005. Total Energy Supply 100,278 QBtu



## Advantages of Biomass Gasification



- Intermediate Synthesis Gas Production
  - Cleansing & Subsequent Processing



- Fuel Slagging
- Conversion of Silica in the Fuel to Crystalline Form
- Heavy Particulate Loading in the Synthesis Gas
- Lower Temperature Operation Vaporizes Less Pollutants
- Gasification Produces a Synthesis Gas
  - Gases Can Be Intermediately Cleaned
  - Gases Can Be Burned in Stages for Proactive Pollution Control
- Recognized by the US Department of Energy and Environmental Organizations as Superior Combustion Technology





## Advantages of Proven Gasification Technology

- Scalability & Energy Output Flexibility
  - Commercial Operations from Three to over Twenty Tons per Hour
  - Energy Outputs of Steam, Heat Electricity & Combinations

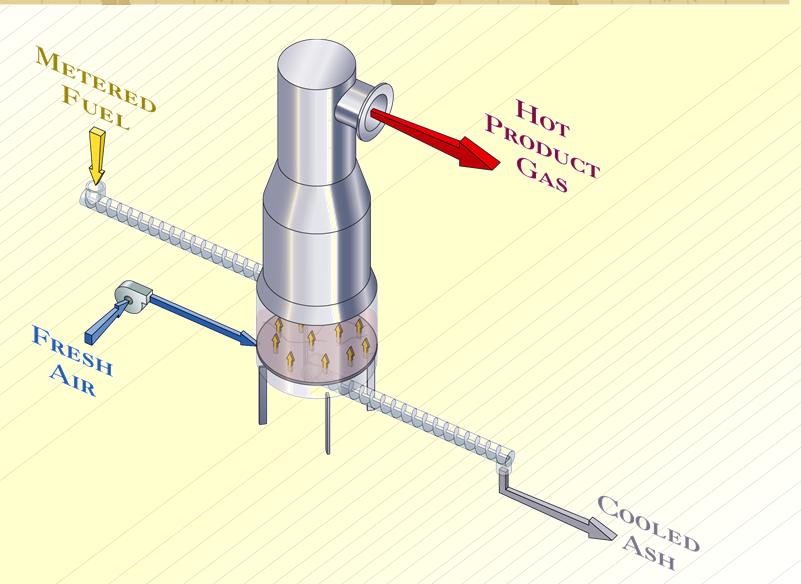


- 12.8 MWe Rice Hull Fueled Steam Cycle
- 4.5 MWe Olive Waste Fueled I/C Engine Generation
- 1.0 MWe Wood Fueled Back Pressure
- Commercial Scale Demonstration Facility in Tulsa
  - Demonstration of Client's Biomass Feed
    - Existing Fuels or New Fuels
  - Third Party Verification of Testing
- Proven Fuel Flexibility
  - Twenty + Biomass Fuels Successfully Demonstrated
  - Five Different Commercial Fuels



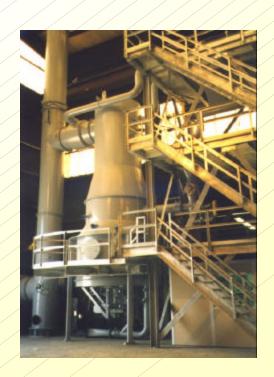


# Gasification Technology

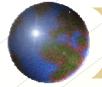




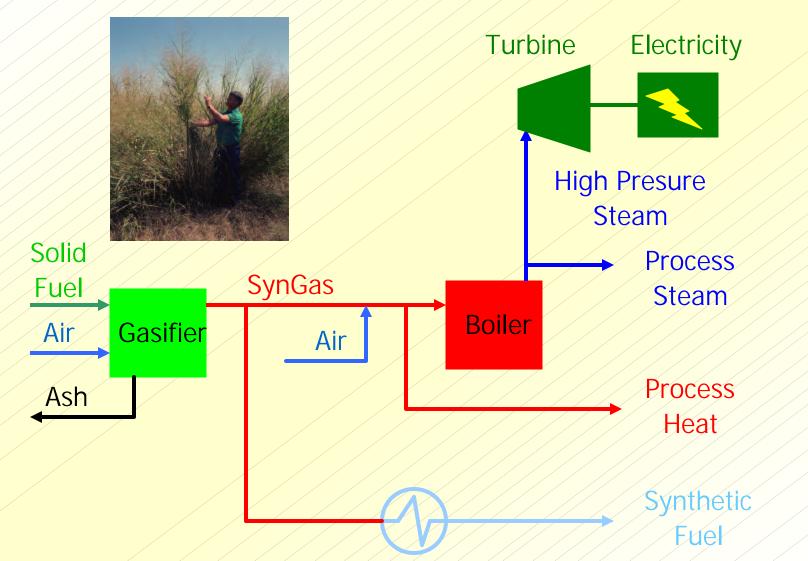
## Primenergy's Major Milestones



- Test Facility Commissioned 1996
- Over 20 Different Types of Biomass Tested
- Privately Owned and Funded
  - Part of the Energy Process Technologies, Inc. Group of Companies
- Primenergy's Gas Processing Improvements
  - S³ Dry Scrubbing with High Temperature Filters for "Dirty" Feed Materials
  - PARS™ Wet Scrubbing and Gas Conditioning for Engine or Turbine Fuels (patented)



# Simplified Diagram





# Commercial Projects

#### Rice Husks To Energy Plants

- Stuttgart, AR Combined Power (12.8 MW) & Steam
- Jonesboro, AR Combined Steam & Heat

#### Olive Waste (Sanza)

 Cosenza, Italy – Scrubbed Gas for Internal Combustion Engines, 4.5 Megawatts









# Commercial Projects

- Carpet Waste to Energy
  - Dalton, GA Steam Output
- Sewage Sludge Destruction
  - Philadelphia, PA 10 Wet Tons per Hour
- Wood Fueled Ethanol Plant
  - Little Falls, Minnesota Combined Heat, Steam and Power

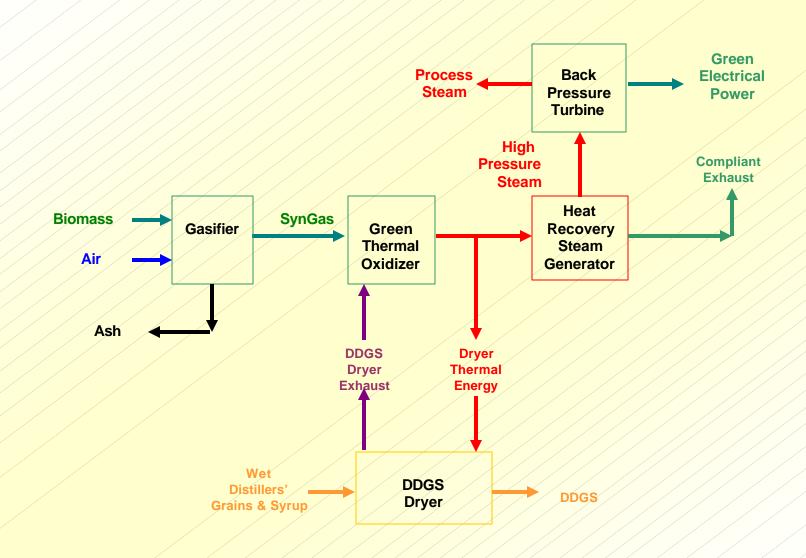








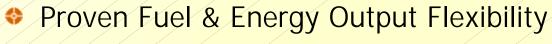
# CMEC Block Flow Diagram





## Competitive Advantages

- Scalability
  - Operating Systems from 24 to over 500 tons per dat



- Over 25 Different Solid Fuels Tested
- Heat, Steam, Power & Combinations
- Biomass Energy is Dispatchable
- Commercial Scale Demonstration Facility
- Recognition by U.S. Department of Energy, National Energy Technology Laboratory, Sandia National Labs
- Single Source, Turn-key Capability Through Energy Process Technologies, Inc. (EPTI) Sister Companies
- All Installed Systems are Operating





## Primenergy's Products & Services



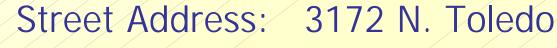




- Process Engineering Design
- Project Management
  - Detailed Equipment Design
- Environmental Permitting
- Process Equipment Manufacturing Though HSI, L.L.C.
- Equipment Installation Through MFSI and Other Specialized Contractors
- Operator Training and Equipment Commissioning
- Project Finance
  - Own Operate, or Project Financing



# Primenergy° 1000 pt 10



Tulsa, OK 74115

Mailing Address: P.O. Box 581742

Tulsa, OK 74158

Voice:

(918) 835-1011

Fax:

(918) 835-1058

E-Mail:

sales@primenergy.com

